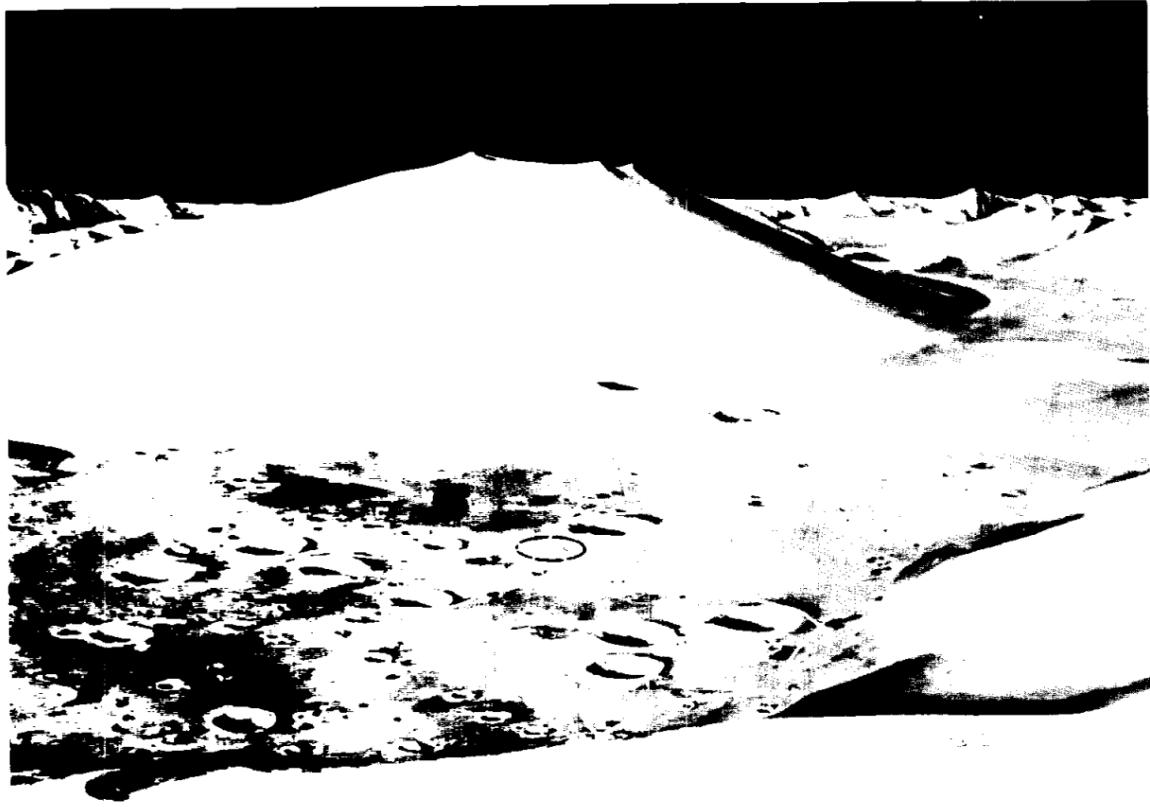


# Roundup Says "Right On" Apollo 17



## ROUNDUP

NASA MANNED SPACECRAFT CENTER

HOUSTON, TEXAS



Vol. 12 No. 1

November 24, 1972

### Med Officer Begins Tour of Duty

Squadron Leader Michael W. Whittle, a medical officer with the Royal Air Force, last week began a two year tour of duty with the NASA Manned Spacecraft Center, the first of several foreign aerospace doctors who will work with U.S. scientists on Skylab.

Richard S. Johnston, Director of Life Science at MSC, said Dr. Whittle is assigned to the food and nutrition area and will be assisting MSC doctors in the M070 series of Skylab medical experiments which are aimed at assessing the effect of spaceflight on the musculo-skeletal and endocrine systems. Aerospace doctors from West Germany, Spain and Sweden are scheduled for similar assignments with NASA within the next several months.

The doctor's respective countries finance the assignment. There is no expense to NASA.

Dr. Whittle is a graduate of King's College, University of London, where he received a doctorate in physiology (1962), the St. George's Hospital Medical School, London, where he received a doctorate in medicine with honors and the University of Surrey where he completed postgraduate studies in biomechanics in 1970.

Prior to joining the RAF, Dr. Whittle served as a house physician and house surgeon at St. George's Hospital 1966-67 and as senior house officer for research from 1967 through 1969. He has authored and co-authored several medical papers.

Dr. Whittle joined the RAF in December 1970, as a junior

medical officer and rose to squadron leader with the Medical Branch of the RAF. He and his wife and three children will reside in El Lago, Texas.

### MSC Employees Honored at NASA Ceremonies

Nine Manned Spacecraft Center personnel were honored recently for outstanding service in spaceflight at ceremonies at NASA headquarters in Washington.

The NASA Medal for Distinguished Service, the highest award, went to Dr. Paul W. Gast, Chief of MSC's Planetary and Earth Science Division.

NASA Exceptional Scientific Achievement Medals were awarded to Dr. William C. Phinney and Dr. David W. Strangway.

Dr. Phinney is Chief of the Geology Branch and Dr. Strangway heads the Geophysics Branch.

Exceptional Service Medals went to Kenneth B. Gilbreath, Porter H. Gilbert, and the SMEAT (Skylab Medical Experiment Altitude Test) Astronauts Robert L. Crippen, William E. Thornton and Karol J. Bobko. Mr. Gilbreath is Deputy Director of Center Operations Directorate while Mr. Gilbert is the Chief legal officer.

Finally, the Equal Employment Opportunity Award went to Carlos Garza, EEO officer.

A total of 76 awards were presented to field center recipients by NASA Administrator Dr. James C. Fletcher.

### MCS Christmas Frolics Pending; Tickets Available

Tickets for the annual Christmas Dance scheduled for December 9, may be purchased from Mary Yarbrough, building 16, Betty Cornett, building 2 or June Roach, building 45.

Also, tickets for the Children's Christmas Party on December 2 are now available from EAA representatives.

All parents are urged to bring the kids to the Children's party in that it will be enjoyable again this year.

### Kraft Presents Length Of Service Awards To Employees

MSC Director Chrispher C. Kraft Jr. recently presented length of service awards to those employees in the center who had completed 25 years or more of service. Listed below are the various directorates and persons who received awards:

**PUBLIC AFFAIRS OFFICE**  
35 Years  
Roy Alford



Artist's concept of the Apollo LRV traverses at the landing site designated Taurus-Littrow on the southeastern rim of Mare Serenitatis (Sea of Serenity). During the 75-hour lunar surface staytime three 7 hour EVA's are planned. EVA 1 is largely occupied with the deployment of the LRV, ALSEP and other experiments, with about two hours available for a traverse. EVA's two and three are largely devoted to the traverses. This section presents the details of the LRV traverses as currently planned.

Below are the Apollo 17 mission events scheduled for December 6-19. Astronauts Cernan, Evans and Schmitt are the prime crew for the launch.

**ADMINISTRATION And PROGRAM SUPPORT DIRECTORATE**

30 Years  
Martin L. Hooper  
Leon A. Kister  
Larry V. Lindley

25 Years  
Francis F. Davis  
Edna F. Stark  
Elton A. Wilborn

**FLIGHT CREW OPERATIONS DIRECTORATE**

35 Years  
Herman E. Williams

**ENGINEERING And DEVELOPMENT DIRECTORATE**

25 Years  
Robert G. Chilton  
Richard B. Ferguson  
M. Meredith Frasher  
John F. Hanaway  
Robert E. Kosinski  
Jack Naimer  
Charles C. Schneider

**FLIGHT OPERATIONS DIRECTORATE**

30 YEARS  
Robert A. Norfolk  
Tom L. Sparks

25 YEARS  
Carl R. Huss

**CENTER OPERATIONS DIRECTORATE**

35 YEARS  
Joseph G. Griffith

30 YEARS  
John R. Briukmann  
Ellis B. Guess  
Charles E. McQuain  
William A. Milam  
Paul S. Moravec

25 YEARS  
Jame M. Coward  
William G. Folkes  
Samuel H. Sponseller

**SKYLAB PROGRAM OFFICE**

30 YEARS  
Arthur R. White

**SPACE SHUTTLE PROGRAM OFFICE**

25 YEARS  
Lester A. Stewart

**SAFETY, RELIABILITY, AND QUALITY ASSURANCE DIRECTORATE**

25 YEARS  
Austin W. Frost  
Clarence M. Presswood

**APOLLO SPACECRAFT PROGRAM OFFICE**

30 YEARS  
Herbert L. Tash

### 3rd Anniversary For Moon Study

Sunday, November 19, marked a special anniversary for scientists studying the Moon.

Three years ago on November 19, 1969-Apollo 12 astronauts

(Continued On Page 2)

APOLLO 17 MISSION EVENTS				APOLLO 17 MISSION EVENTS (CONCLUDED)			
EVENT	G.E.T. HR:MIN	C.S.T. HR:MIN		EVENT	G.E.T. HR:MIN	C.S.T. HR:MIN	
---WED/DEC. 6---				---WED/DEC 13---			
LIFT-OFF	00:00	8:53 p.m.		EVA-3 (7 HR)	162:40	3:33 p.m.	
EPO INSERTION	00:12	9:05		TV COVERAGE (6 HR, 39 MIN)	163:00	3:53	
-----THUR/DEC. 7-----				-----THUR/DEC. 14-----			
TRANS LUNAR INJECTION				CSM LUNAR ORBIT PLANE CHANGE (REV 48)	182:36	11:29 a.m.	
BURN INITIATION (t <sub>0</sub> = 346 SEC)	03:21	12:14 a.m.		BURN INITIATION (t <sub>0</sub> = 19 SEC)	187:47	4:40 p.m.	
CSM/S-LB SEPARATION	04:12	1:05		TV COVERAGE (LM LIFT-OFF, 25 MIN)	188:04	4:57	
TV COVERAGE (TRANS & DOCK, 15 MIN)	04:12	1:05		CSM SECOND PASS OVER LLS (REV 51)	188:11	5:04	
DOCKING	04:22	1:15		LM ASCENT (REV 51)	188:03	4:56	
CSM/LM EJECTION	05:07	2:00		LM LIFT-OFF	188:11	5:04	
S-LB EVASIVE MANEUVER	05:30	2:23		LM INSERTION (t <sub>0</sub> = 438 SEC)	188:58	5:51	
FIRST MIDCOURSE CORRECTION (MCC-1)	08:45	5:38		TPI (APSI t <sub>0</sub> = 3 SEC)	189:39	6:32	
(OPTIONAL UP TO TLI + 9 HR)				RENDEZVOUS MANEUVERS	190:00	6:53	
-----FRI/DEC. 8-----				-----FRI/DEC. 15-----			
MCC-2	35:30	8:23 a.m.		BRAKING	190:00	6:53	
-----SAT/DEC. 9-----				-----SAT/DEC. 16-----			
MCC-3	66:55	3:48 p.m.		DOCKING	193:59	0:52	
-----SUN/DEC. 10-----				-----SUN/DEC. 17-----			
MCC-4	83:55	9:48 a.m.		LM JETTISON (REV 54)	194:04	10:57	
SIM DOOR JETTISON	84:25	9:18		CSM SEPARATION			
LUNAR ORBIT INSERTION (LOI)	88:56	1:49 p.m.		BURN INITIATION (t <sub>0</sub> = 13 SEC)	195:39	12:32 a.m.	
BURN INITIATION (t <sub>0</sub> = 395 SEC)	89:21	2:14		ASCENT STAGE DEORBIT	195:58	12:51	
S-LB PREDICTED LUNAR IMPACT				ASCENT STAGE LUNAR IMPACT (CSM REV 55)			
SELENOGRAPHIC LATITUDE = -7.0°				SELENOGRAPHIC LATITUDE = 19.9°			
SELENOGRAPHIC LONGITUDE = -8.0°				SELENOGRAPHIC LONGITUDE = 30.5°			
DESCENT ORBIT INSERTION (DOI-2, REV 3)	93:13	6:06		-----SAT/DEC. 18-----			
BURN INITIATION (t <sub>0</sub> = 23 SEC)				-----SUN/DEC. 17-----			
-----MON/DEC. 11-----				-----SUN/DEC. 17-----			
UNDOCKING & CSM SEPARATION (REV 12)	110:28	11:21 a.m.		JCC-5	253:42	10:35 a.m.	
CSM CIRCULARIZATION (REV 12)	111:55	12:48 p.m.		TV COVERAGE (TRANSEARTH EVA, 1 HR, 4 MIN)	257:22	2:15 p.m.	
(t <sub>0</sub> = 4 SEC)				-----MON/DEC. 18-----			
LM DESCENT ORBIT INSERTION (DOI-2, REV 12)	112:01	12:54		MCC-6	282:18	3:11 p.m.	
BURN INITIATION (t <sub>0</sub> = 27 SEC)				TV COVERAGE (30 MIN)	284:07	5:00	
POWERED DESCENT INITIATION (REV 13)	112:30	1:43		-----TUES/DEC. 19-----			
DPS IGNITION	112:59	1:52		MCC-7	301:18	10:11 a.m.	
HIGH GATE (P63 TO P64)	113:00	1:53		CM/SM SEPARATION	304:03	12:56 p.m.	
LOW GATE	113:01	1:54		ENTRY INTERFACE	304:18	1:11	
VERTICAL DESCENT (P64 TO P66)	113:02	1:55		CM LANDING	304:31	1:24	
LM LANDING				-----TUES/DEC. 19-----			
SELENOGRAPHIC LATITUDE = 20.2°				-----TUES/DEC. 19-----			
SELENOGRAPHIC LONGITUDE = 30.7°				-----TUES/DEC. 19-----			
CSM FIRST PASS OVER LLS (REV 13)	112:57	1:50		-----TUES/DEC. 19-----			
FIRST EVA (EVA-1, 7 HR)	116:40	5:33		-----TUES/DEC. 19-----			
TV COVERAGE (5HR, 38MIN)	117:50	6:43		-----TUES/DEC. 19-----			
-----TUES/DEC. 12-----				-----TUES/DEC. 19-----			
EVA-2 (7 HR)	139:10	4:03 p.m.		-----TUES/DEC. 19-----			
TV COVERAGE (6HR, 30MIN)	139:30	4:23		-----TUES/DEC. 19-----			

NASA-MSC-FOD  
MISSION PLANNING & ANALYSIS DIVISION  
OCTOBER 30, 1972

# Space-Science Project Attracts Students



NOT SO SIMPLE—These young men realize that it's not so easy to get into a space suit, even a mockup one! These students are participating in the Space Science Education Project.

## 3rd Anniversary— NASA Awards

(Continued From Page 1)

Alan Bean and Charles Conrad Jr. set up the first Apollo Lunar Surface Experiments Package.

The first lunar research station included five experiments and a transmitter, all powered by a nuclear-fueled generator.

Although designed to last no more than a year, four of the five experiments continue to send information on underground tremors, magnetic fields, solar winds, and particles in the lunar atmosphere.

Of the Apollo 12 experiments, only a gauge to register atmospheric pressure has stopped operating.

Apollo 17 will add the fifth and last surface station to the network and will bring the total number of active experiments to nearly two dozens.

On this third anniversary, there are no predictions of life expectancy for the surface experiments packages, but their nuclear power sources may continue to provide energy well into the twenty-first century.

But that will probably be far longer than the experiments can survive the cycle of extreme heat and cold on the moon.

## \$64 Million

### Contract to NAR

NASA has signed a \$64 million cost-plus-fixed fee award contract with North American Rockwell Corporation, Downey, Calif., for design, development and test of the docking module, docking system and modification of an Apollo Command and Service Module for the Apollo Soyuz Test Project.

The hardware would be used in the joint US-USSR rendezvous and docking mission planned for launch in the summer of 1975.

North American has been working under a letter contract since June 30, 1972.

President Nixon and Soviet Premier Kosygin signed an agreement for the mission during the President's visit to Moscow, on May 24, 1972.

Under the contract, NAR will modify an Apollo Command and Service Module to augment the reaction control system, and heaters, modify controls and displays, modify the docking ring to add a new umbilical, revise storage, and make the CSM compatible with the Saturn IB launch vehicle.

At least once a week, sometimes more, MSC seems to be invaded by school children.

These students are participating in the Space-Science Education Project, designed to acquaint them with space-science concepts application, major accomplishments and future objectives of NASA.

Lecture-demonstrations are conducted by space-science specialists who are teachers authoritatively informed on the space-science and activities of NASA.

The auditorium lecture demonstration uses simple experiments and scale models of space hardware to explain the basic scientific principles applied in the exploration of space. These lectures can be adapted to capture the interest of students from elementary school through the college and university level.

During the 1971-72 school year, approximately 21,085 student and teachers attended MSC's lecture-demonstrations.

In addition to providing programs and other services for the educational community, presentations are made before civic, professional and industrial organizations.

The lecturers also serve as resource persons for radio and television.

## Kraft Briefs

### Houston Chamber of Commerce

Future manned missions into space and applications of space technology to solve earthbound problems were the topics of briefings November 1 at the NASA Manned Spacecraft Center for 32 members of the Houston Chamber of Commerce board of directors and their representatives.

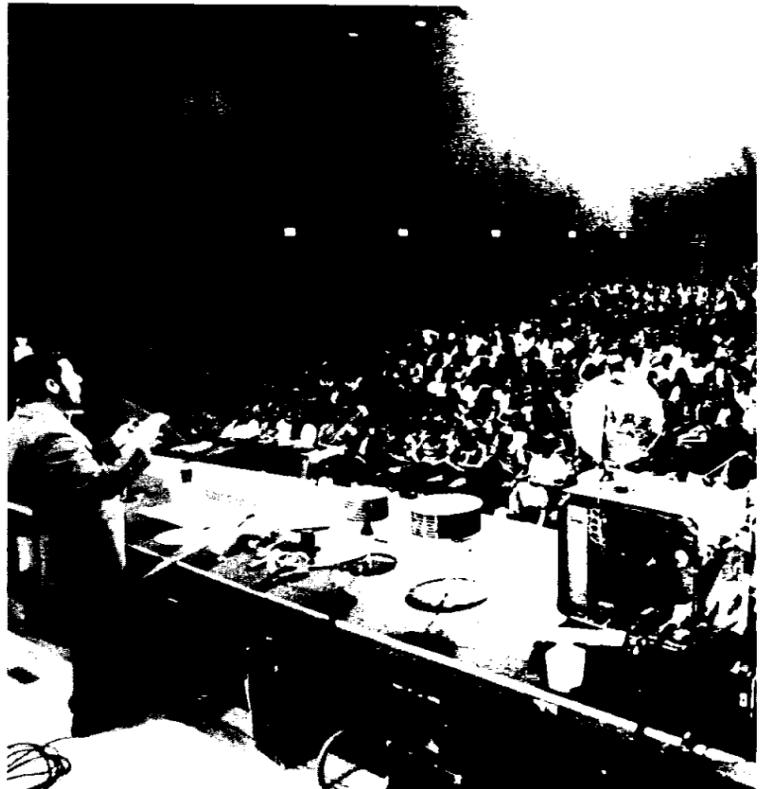
The group was greeted by MSC Director Christopher C. Kraft, Jr. who described the Skylab earth-orbital workshop the Apollo-Soyuz Test Project NASA is planning in cooperation with the Soviet Union and the Space Shuttle reusable space vehicle. Kraft also discussed with the group an urban system project underway at MSC which will use space know-how in the design of waste treatment and utilities systems for cities.

The group also visited the Mission Control Center, the Earth resources laboratory and the Skylab crew training mockups where they were briefed by astronaut John L. Swigert.

### Take stock in America.



EXPLAINS MAKEUP—Once in the mock-up suit, MSC's lecturer-demonstrator, Jim Poindexter, explains the purpose and make-up of the space suit.



CAPTIVATES AUDIENCE—Poindexter captivates the audience as he explains scientific principles used in the exploration of space.

## Zero-Gravity May Prove Beneficial

A Lockheed-built demonstration aimed at proving the feasibility of manufacturing materials in the zero-gravity of space is aboard Apollo 17 which will be launched in mid-December.

The heat flow and convection will be performed while the lunar command ship is on its way to the moon. The experiment is contained in a seven-pound box and will perform six tests on heat transfer weightless liquids and gases.

Information obtained is expected to be of value in designing future space experiments and in assessing the feasibility of many processes that have been proposed for manufacturing products in space.

Among products which have been suggested as benefitting from

the lack of gravity are composite materials (glassfiber, reinforced metals), immiscible materials (oil and water, metals that will not mix in gravity), and better glasses for lenses and laser optics.

Zero-gravity is also seen as contributing to the combining of materials of very different densities and properties, such as glass and steel.

This demonstration is intended to show specifically the nature of spontaneous fluid flow in a zero-g environment. This information will be useful to experimentors who are studying the feasibility of growing larger crystals of greater purity in the near-zero-gravity environment of space than can be grown on on-gravity earth.

## ROUNDUP

NASA MANNED SPACECRAFT CENTER HOUSTON, TEXAS



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Editor: Janet Wrather

Photographer: A. "Pat" Patnesky

## Mets, NASA No. 2 Win MSC Playoffs

The NASA Colonnades Mets won the 1972 MSC's slow pitch tournament coming out of the loser's bracket to defeat the Clear Lake Hospital Blazers twice—21-13 and 11-10—on a 3-run homer by all-star Jim Smith in the last of the 7th inning.

Smith and Most Valuable Player J. Giamalva hit 4 and 5 home-runs respectively in the last 9 times each batted.

The Mets became the eighth team in 8 years to win coming out of the loser's bracket.

In the Women's softball championship playoff, NASA No. 1 defeated TWR 6-5 in 8 innings on a single with two outs by Dinky Warren of NASA No. 1.

This was the third time the playoff had been between these two teams.

### The All Tournament Teams

**MEN**  
MVP - J. Giamalva - Mets  
Batting Leader - M. Richmond,

Strokers - 11-13 - .846  
P. - J. Boykin - CLC Hospital  
C - D. Waggett - Mets  
IF - J. Kaderka - Hospital  
IF - H. Wilson - 2134rd Comm  
IF - M. Brunjes - CLC Hospital  
OF - J. Smith - Mets  
OF - D. McFarland - CLC Hospital  
OF - J. Overfield - 2103rd Comm  
Com  
OF - R. Wright - 2103rd Comm

**WOMEN**  
MVP - Gay Williams - NASA No. 1  
P. - Chris Milner - TRW  
C - Jo Birchett - NASA No. 1  
IF - Carol Haley - NASA No. 1  
IF - Erna Bell - TRW  
IF - Dinky Warkren - NASA 1  
IF - Emma Jones - TRW  
OF - Jo Nelson - NASA No. 1  
OF - Phyllis Middleton - NASA No. 2  
OF - Irene Sanchez - NASA 1  
OF - Marilyn Hughes - TRW

## Camera Settings for Apollo 17 Blastoff

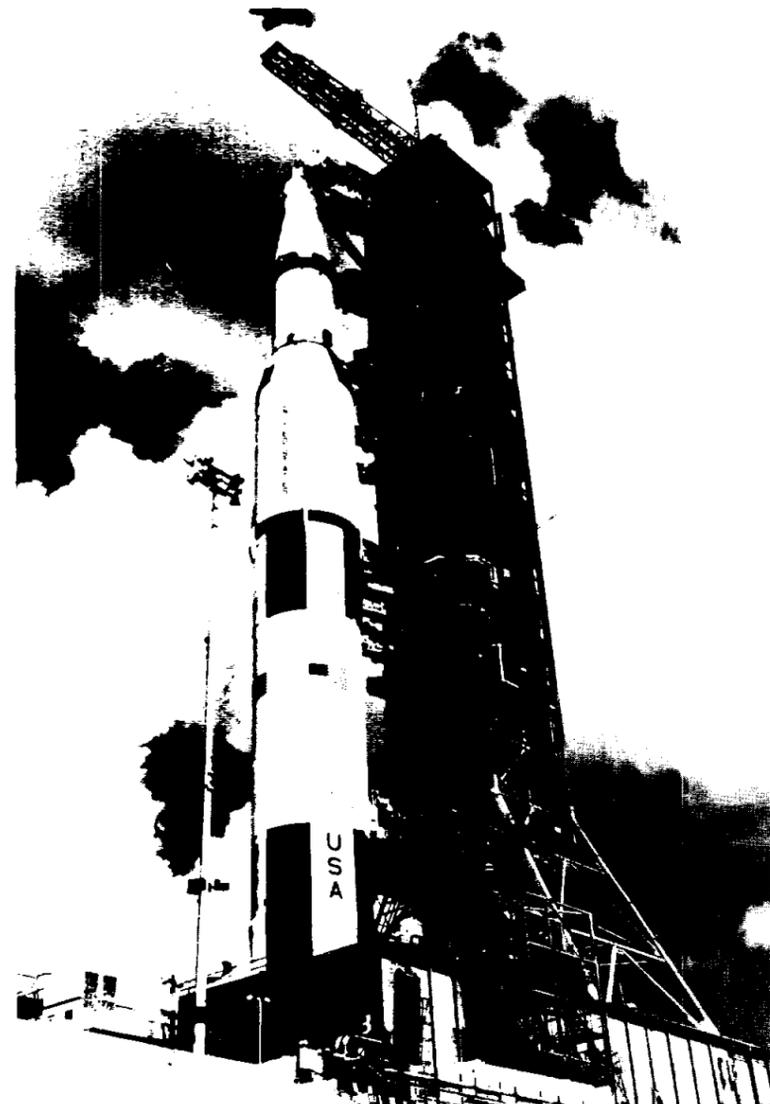
Here are the guides for those amateur photographers lucky enough to witness the liftoff of Apollo 17:

1. If nonadjustable cameras with built-in light sensors are used, nothing will be recorded.  
2. If adjustable lens settings are used, the following settings are great for recording the event with either black and white or color film based on 1/50 second shutter speed:

Film Speed (ASA)	f-Stop Before lift-off	f-Stop After lift-off
25	2.8	4.5
64-80	3.5	5.6
100-125	4.5	8
160	5.6	11
400	8	16

Movie buffs using 16 frames per second, should try the following:

25	2.8	4.5
160	6.3	11



POISED FOR LAUNCH—The Apollo 17 launch stands on the pad at Launch Complex 39A. The final mission of the Apollo program will be manned by Eugene A. Cernan, commander, Harrison H. Schmitt, lunar module pilot, and Ronald E. Evans, command module pilot. Liftoff is scheduled for December 6 from Cape Kennedy, Fla.

## Roundup Swap-Shop

Swap Shop advertising is available to MSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

### MISCELLANEOUS

Surf board, \$40, Wet suit, long leg sleeveless \$20, 334-2993.  
Tennis racket, gd quality, \$10, scuba equipment, individ items or complt set, Coan, 488-1028.  
Drum set, beginners, 3 yrs old after 7 p.m. 488-3797.  
Lrg swing set, \$19, Child's picnic table, \$2 tricycle, \$2 Lapko, 946-4311.  
Free rocks, chert, sphalerite, celphapods, misc, ideal for rock garden, 2 cubic feet, David, 649-3515.  
Elec organ, Thomas Paramount, Horse sh consl, 19 voices, band bx, leslie spker, chimes etc, like new, \$1350, 333-3988.  
Grand piano, xlint tone, needs tuning, \$500, Neal, 471-3119.  
12 gauge Remington model 1100 shotgun, 3" Magnum, lyman choke all tubes, xlint cndn, consider swap, \$125, 474-2367.  
2 fiberglass bucket swivel boat seats w/ 13" storage type bases, white, both for \$25, 474-2367.  
9" port B & W TV, gd cndn, \$45, elect radio equip, Pierce Simpson depth indicator, nds transducer, \$55, 334-1946.  
Guns, mostly military col, Springfield, Enfield, Mauser, Japanese, sell all or pt, 334-1946.  
McIntosh model 240 amplifier, performance guaranteed, checked at last Mac Clinic 200, Talbert, MI-39206.  
Car radio, 72 Becker Europa AM/FM, under warranty, prfct, list price \$154, will sell for \$40, Fein, 771-6100.  
Maternity clothes, xlint cndn, sz 10, tops, pants, dresses, \$5-\$7 per outfit, Teasdale, 482-7801.

### HOUSEHOLD ARTICLES

Sofa & chair, \$30., Grunding Cnsl stereo w/ AM/FM radio & turnable w/ plug-in space for tape recorder and 2 ext speakers, \$50, portable stereo record player, \$22, 483-6381 aft 5:30 p.m. 488-5345.  
Spinet, Wurlitzer bench in gd cndn, gd practicing piano, \$200, safari collapsible dog crate 22 x 28 x 36, Sayers, 333-2395.  
Hospital bed, steel, lrg rubber casters, fully adjustable for legs, torso, prfct cndn, no mattress, will deliver in Clear Lake area, \$15, Hull, 334-3134.  
Stereo recvr w/ AM/FM radio, 2 spkrs, xlint cndn, walnut cabinets, Diann, 559-2612.  
Zenith 18" B & W TV, \$20, 946-5849 after 5 p.m.  
Metal wardrobe, \$20, red trad sofa & chair, \$50, double dresser, \$30, rocker, \$10, dress form, \$5, several antiques, 332-3789.  
Kroehler couch, 93", brown gd cndn, \$50, baby crib, gd cndn, \$20, 488-2962.

### VEHICLES

68 Olds Cutless convert, gd tires, xlint mech, all major options incl, air, \$1295, Bayton, 667-4533  
64 Fairlane, 2-dr hrdtp, V-8, auto, air radio, heat, 559-2626, after or 483-3413.  
72 International Scout II, 6 cyl, std, air radio heat, 559-2626, after 6, 559-1777.  
72 Chevelle Malibu 35, 2-dr hrdtp, prw str, air side moulding, 12,000 mi. prfct cndn, must sell, \$3200. Major Synder, 483-6381, at 5:30 p.m., 488-5345.  
70 Triumph Trophy 250cc Scrambler, 6000 mi, new uaper end, nvr raced, beautiful shape, \$380, 334-2993.  
30-30 Marlin Model 93, beautiful cndn, \$200, 483-3018 or 337-1839.  
Classic 57 Triumph TR3 Roadster, good cndn, must sell \$600 or best offer, Johnson 333-3186.  
Go-Kart, racing slicks, 8 cu in, very fast, \$165, David, 471-0770.  
70 Yamaha 350 twin, \$425 or trade for Yamaha 175 Enduro, Hutchins, 538-2228.  
20" Banana seat bike \$15, 20" Sears lawnmower, overhauled, \$15, Corner desk, chest, bookcase, \$15, Demoss, 488-4019.  
62 Chevrolet 1/2-ton pickup, motor recently overhauled, nw shocks, \$400 or best offer, Gray, aft 6 p.m. 488-1549.  
68 VW Sedan, new tires, brakes, battery, lt blue, \$550, 333-2616.  
72 Vega Hatchbk, auto, air, radio, delux int, 7000 mi, silver, warranty, like new, 333-3988.  
72 Matador, AM, sta wgn, air p/s, economy V8, like new, sacrifice below blue book, 944-7632 aft 5 p.m.  
64 Corvair, Monza, 2 engines, many engine, transmission pts, 4 spds, auto seats, wiring, ideal for dune buggy, 334-1946.  
1966 Pontiac V8, Catalina Sta wgn, auto, air, pwr str and br, new battery, xlint running cndn, clean, brown 921-7212 or 722-9802.  
70 Pontiac Catalina, air, pwr, xtra clean, \$2125, 337-2153.  
68 Buick Skylark custom special, full pwr, air, 40,000 mi. see to believe, \$1700, 337-2153  
65 Ford 2-dr ht br exhaust sys, & shocks, rebuilt engine, reliable trans, \$300, 488-5505.  
72 Ford Pinto Auto trans, air, xlint cndn, 8000 mi, Brennan, 554-5287 aft 6.  
70 Wheel camper, ht foldout, sleeps 6, stove, oven, icebox, porta-potty, pressure water sys, like new, \$1000, 471-2447.

71 Plym Spt Fury, 3 st wgn, dual air, all power, power split seat, fully equipt, 27,000 mi, \$2950, 554-2266 after 6 p.m.  
70 Chrysler Town & Country, 3 seat sta wgn, all power, 32,000 mi, \$2750, 554-3473.  
67 Chevrolet Impala sta wgn, air, ps pb, auto, radial tires, 1 owner, mint cndn, 488-2962.

### PROPERTY & RENTALS

El Lago; 4-2-2 early American 1 1/2 stories, trees, fireplace, 5 1/2 percent mortgage, brick and wood, utility and breakfast area 334-3406.  
House, Spanish, 4-2 1/2-2, 2100 sq ft, court yd, lrg fenced yd w/ trees, Nassau Bay, 333-3988.  
For rent, League City City (Pecan Forest), 3-2-2, carpet, drapes, fenced yd, brick, all elect, 1,600 sq ft, no lease required, \$250, mo, 488-3353.  
Nassau Bay, Spanish, 4-2-2 2500 sq ft, court yd, fenced back w/ large oak trees, 6yrs old 5 and three-fourths percent loan, 333-2880 or 488-3353.  
CLC, Old English, lrg 3-2-2 on Cul-De-Sac formal areas, custom drapes, fireplace in lrg fam room, Don, 488-5487.  
Hause, League City, 3-2-2 lrg ot, Cedar fence, lrg den, carpet, xlint cndn, \$23,950, Grogan 554-5417.

### PETS

Unusual pet, 4" Boa Constrictor, incl 10" showcase & smaller retainer cage, \$70, Earl 334-2354.  
Pretty black registered quarterhorse, mare, 7 yrs, Neal, 471-3119.  
German Shepherd, female, AKC, gentle, \$65, German Shep, male AKC, gentl, but gd watchdog, Grogan x6361.

### WANTED

4 to 5 hp aircooled outboard motor, Becker, 643-4151.  
Wants couple to share driving and expenses to KSC and return for the Apollo 17 launch, Major Snyder, 483-6381.  
One or two 20" bicycle front wheels, Andrei, 334-2180.  
Oakbrook, 4-2-2 or 3-2-2 plus study, Spanish or Traditional, lrg, mast bedroom, sm fenced yd. Abadie, 645-0866.  
Spanish or Comtemp, 4-2 1/2-2 Oakbrook West or equiv, Bullock, 774-6602.  
Old but serviceable gas space heater, 333-2165.  
Ski clothes, ladies, sm, ski equip, boots, skis, etc, Sanford, 488-4302.

### BOATS

Lido 14 sailboats, info on prices and cndn of used Lido's for sale by owners, Hoover, 334-2392.  
68 Cobia boat, 71-115 hp Evinrude motr, xlint cndn extras, \$1995, Rhett 645-2700.  
Fully equipped Chrysler Conqueror w/ 120 hp outboard, trailer, mint cndn, list over \$4400, now \$2995, Bland, 333-4580.

## Aircraft Landed By Remote Control

An extensively modified twin-engine aircraft has been successfully landed by remote control by NASA's Flight Research Center, Edwards, California.

A 1500 kilogram (3500 lb) Piper Commanche (PA-30) was landed on the dry lakebed at Edwards under the control of a pilot sitting in a ground cockpit located several miles in the control room of the NASA facility. A safety pilot was on board the aircraft.

The landing test was part of a demonstration of a new flight test technique that could provide an economical and far less hazardous means of testing advanced aircraft and spacecraft of the future.

The new method is not intended to replace manned flight testing but would be used where there is a high degree of risk that the test aircraft would be severely damaged with possible physical injury, or where costs would preclude a manned fullscale flight test vehicle.

19" Glastron hull, cuddy cabin, hd, 100 hp interceptr w/ Eaton outdr, bg wh tr, nvr in water, \$2850, 334-1946.

### LATE ENTRIES

Hilltop Lakes Resort, choice wooded lot on hill-side overlooking lodge & adjacent lakes, 333-3813.  
70 Yamaha 360 Enduro, immaculate, mint cndn, less 1300 mi, \$595, Ream, 488-0992.  
Sherwood AM/FM tuner w/ amplifier, \$25, Ream 488-0992.  
66 Cadillac Sedan Deville, vinyl top, stereo, all power, T & T st wh, gd rubber, xlint cndn, \$995, 479-7815.  
18" Gaspar deep V pleasure boat, big wh tr, 2/135 hp Chrysler outboard, reduced pr for qui sell, \$1550, 479-7815  
Panasonic Quadrosonic stereo, 2 mos old, \$175.00, 479-7815.  
18" Lyman clinker blt wooden lapstrake, 90 hp Evinrude, bg wh, galvanized tr, extras, \$1250, 944-4153.  
63 Pontiac Lemans, std trans, 326 eng, compltly overhauled, xlint cndn, \$500, 944-3586.  
69 VW convertible, 17000 mi, AM/FM radio, \$1000, 488-2578.  
House for lease, 4-2-2, central air and heat, blt-in kitchen, living rm & den, intercom, in Bayou Brae across from Clear Creek Hi School, 334-2844.  
61 Belaire Sedan, ps, pb, air, gd work car, one owner, \$200, 946-4311.  
71 Suzuki 185 Sierra, st/tr bike, \$500, Spann, 334-1274.  
67 Impala Chev. 9 passenger sta wgn, one owner, low mileage, factory air/heat, radio, fr/rear spkr, gd tires, 332-3915.  
Handmd dacron-lined quilt, white & orchid, embroidered flower designs, ideal Christmas gift as double bed quilt or bedspread, \$65, 471-4305.  
Sta wgn, 64 Bellaire, clean, nw paint, air, radio, Eggleston, 334-2897.  
70 Ford Supervan, radial tires, paneled, screened windows, insulated camperized, stereo tape deck, \$1775, 334-3204.

## JIMMY WARREN MEMORIAL BOWLING LEAGUE

Team Standings	Won	Lost
Ball Busters	30	14
Ascenders	29	15
Spoilers	27	17
Hexes	26	18
Jokers	25	19
Team No. 9	24	20
Alley Oops	23	21
Hertz	21 1/2	22 1/2
Clowns	20 1/2	23 1/2
Pin Pounders	18	26
Strikeouts	18	26
Fabricators	15 1/2	28 1/2
Chokers	15 1/2	28 1/2
Mixers	15	29

Team Standings	Won	Lost
High Team Set (3 games)		
To Date Clowns	3112	
High Team Set (3 games)		
11-16-72 3049,		
High Team Game To Date		
Clowns	1111	
High Team Game 11-9-72		
Spoilers	1121.	
High Individual Set To Date		
Charley Skillman Hexes	705.	
High Individual Set 11-9-72		
Larry Keyser Spoilers	702.	
High Individual Game To Date		
Pete Peterson Alley Oops	283.	
High Individual Game 11-16-72		
Mike Bankey Hexes	257.	
Individual Scratch Highs:		
Games		Name
233-226		Larry Keyser
209-211		Ron Durkee
224-203		Ken Baker
209		Hector Escobedo
225		Al Spivey
225		Mike Bankey
224		Nick Jevas
223		Jack Kochner
222		Carl Grimm

# A New Era of Space Exploration Begins

Sharon had always been awed by Astronauts. To her, anyone who had the courage to venture into the unknown horizons of space had to be some kind of super-hero.

Now, face to face with Eugene A. Cernan, Sharon said:

"Gee, this is the closest I've ever been to an Astronaut."

Cernan smiled and began a conversation with the young lady who had come to tour MSC. His look, his actions said:

"Don't put me on a pedestal I'm just an ordinary man doing my job and enjoying it."

This, in essence, is the attitude of all three Apollo 17 Astronauts.

In the last Apollo crew press conference held at MSC on November 10, the Astronauts expressed feelings and ideas about Apollo 17.

According to commander Cernan, the design of the Apollo 17 patch was no accident.

"We put a great deal of thought and spent a lot of time in that patch. We knew what we wanted to do in words, but it was hard to capture with symbolism; we think we did."

In an earlier interview, Cernan had described the patch:

"We have a bust of Apollo, of the god Apollo, on our patch. He represents not just Apollo, the Apollo program, but we feel that he represents, and the figure that he gives us on our patch, mankind himself."

"He represents knowledge, represents wisdom; and Apollo is looking out into the future. He's not looking behind. And he's not simply looking at the Moon-someplace that mankind has been and in a sense has a goal that mankind has accomplished. But he's looking beyond the Moon and into the future."

"We have come along with him, up in the corner of our patch, a golden Moon, sort of representing a golden era of spaceflight that we are bringing to a close now."

Now superimposed upon this Moon, and alongside the bust of Apollo, alongside mankind, we're a bit parochial: we have a very contemporary American eagle. An American eagle whose wings are colored with the blue and covered with the red stripes of our flag. And we have three white stars indented into the top of this eagle's wings."

Apparently, the names of the spacecraft took much thought also:

"Like our patch, we wanted those names to mean something," "And like our patch, we wanted to pay tribute to the people who dedicated their lives in this country of ours towards making the space program what it is."

"We wanted to pay tribute to our nation not only in our patch, but in the names of our spacecraft. And I think very fittingly after exercising many,

a greater reality in our country, the thing that has made this impossible dream and made America what it is today is that we have never turned our back on challenge."

Thus the name "Challenger" was also given to the Spacecraft.

"We sort of feel, symbolically so, that Challenger might impart a feeling to all people of the world that Apollo is really the

foremost in my mind was the thought that "What can I do for my country?"

"And I think being able to finally fly on Apollo 17 means that I have hopefully developed the capability that will portray the fact that this country of ours, this United States, has the capability of getting out and doing things."

Evans also admitted that he

we, as United States citizens, have to really be proud of is the fact that we have a space program and we as a nation have developed that capability."

"There is not one other country in the world that wouldn't give any opportunity, anything to say that they could send somebody to the Moon, and they look up to the United States and say, "Gee, United States that's great."

Astronaut Harrison Jack Schmitt added:

"I think it's important that we remember that in any effort of a magnitude of Apollo that there will be unanticipated returns good and bad, but I think for the most part, good over the next hundred, two hundred thousand years that will come out of such an effort."

"And as you look into the past, I think we can say that for the most part man has progressed as a result, not only of the geographic exploration of frontiers but of the intellectual frontiers."

Although Apollo 17 is the last scheduled manned-mission, Cernan feels that man will continue to explore space:

"It is a beginning. It's the last Flight, but it's the last flight of a very, very important beginning in the history of this world. And when you look at what's been done and you look into the future, I don't think any of us can ever say that anything is impossible."

Schmitt also expressed the feeling that space exploration had just begun:

"Although we will pause and look at least at what next we would like to do on the far frontier of space while we use the near frontier, I have ultimate confidence that we will go out there again and I think a lot sooner than maybe some of the pessimists in this country and certainly in the world have said."

"The reason I think we'll do that is because within the youth of this country and within the minds of their parents there's a seed of enjoyment, to a certain extent, but a seed of belief that it was basically an important thing to do."

"And with that seed there I think there's no question but that this country, hopefully as a leading nation, but the world in general and mankind in general will be exploring space in the future."



many ideas and certainly with no random thought but with a very determined effort, we came up and named our command module, and I think very appropriately, America."

Referring to America as the "Impossible Dream" Cernan explained how the crew continued its theme:

"You know the impossible dream that I like to call America, that I like to think of as our country, was not an accident. That impossible dream became a reality in the greatest nation in the history of the world today because a lot of people were willing to put forth and lot of people were willing to exercise their minds and their bodies and give up their lives. So I think, fittingly, to go along with this impossible dream, this dream that has become and is becoming even

beginning of that challenge which faces all the people of the world today." Cernan said, "It's a challenge of the future, it's a challenge for all mankind. And this is why we called our spacecraft America and Challenger and this is the feeling and this is the meaning behind those two spacecraft."

The need for challenge was indeed Ron Evan's reason for becoming an Astronaut. Evans said:

"For me, Apollo 17 is a kind of culmination of many ideas that I've had in my own mind for a long time."

"I'm proud to be an American and to be part of this country, and a long time ago when I found out that I had the opportunity to become an astronaut, I kind of asked myself, "Hey, why do you want to be an astronaut?" And I think first and

had egotistical reasons for wanting to be in the Apollo program:

"You look at your way of life and you decide that, gee, there aren't - you can't be a Lewis and Clark, you can't go up some river and see what is at the end of the river nowadays. That's already been done."

"What can I do in this day and age? I have a possibility of going to the Moon, and, for me, Apollo 17 is going to fulfill that possibility."

In the minds of many people all over the United States, the question probably arises; Why do we have the Apollo program? What has America gained from it and what do we expect to gain? Anticipating this question, Evans stated:

"In my mind, and I'm sure in the eyes of all of America, the one thing in the last decade that

## Exchange Store Holds Special

The MSC Exchange Store is having a pre-holiday special. All Apollo 7-16 (inclusive) glass sets, originally priced at \$20, are now only \$16.95. Get yours today!

## MSC Golf Winners

The MSC Golf Association held another Fun Tourney recently on the Bear Creek Course.

First place winners with a score of eleven under par 61, were Harry Dobson, Bill Keathley, Henry Kaupp and Tom Strickler. Each man received a \$20 merchandise certificate.